



**City of Santa Barbara**  
Public Works Department

**Staff Report**

**HEARING DATE:** November 9, 2011

**TO:** Historic Landmarks Commission

**FROM:** *JE* John Ewasik, Principal Civil Engineer

**SUBJECT:** Mason Street Bridge Replacement Project, MST2010-00261

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**RECOMMENDATION**

That the Commission receive a presentation and discuss the Mason Street Bridge Replacement Project (Project).

**DISCUSSION**

**Background**

The City, with grant funding from the Federal Highway Administration, proposes to demolish the structurally and hydraulically deficient Mason Street Bridge over Mission Creek and construct a new bridge at the same location. The bridge was rendered obsolete due to the 2001 City approval of the Lower Mission Creek Flood Control Project (LMCFCP). The existing bridge's span is "too short" to accommodate the proposed LMCFCP channel widening. The existing bridge is about 36-feet long and 35-feet wide, and the new channel will be 55-feet wide. As such, a new 55-foot span bridge is planned for this location. As noted in the LMCFCP's conceptual plan from the 2000 Environmental Impact Statement/Environmental Impact Report (EIR/EIS) the bridge replacement will include realigning the south end of Kimberly Avenue to accommodate the new bridge and channel configuration, and the construction of Habitat Expansion Zones (HEZ).

The LMCFCP has been a joint effort between the US Army Corps of Engineers (Army Corps), the County Flood Control District, and the City to address a significant history of flooding in the last 1.3 miles of Mission Creek, from Canon Perdido Street to the Cabrillo Boulevard Bridge, just before the Creek enters the Pacific Ocean. The LMCFCP includes:

1. Increasing the channel capacity from an estimated 1,500 cubic feet per second (cfs) to 3,400 cfs, thereby improving flood protection from an approximate 6-year storm runoff event to a 20-year storm runoff event;
2. Replacing bridges along Lower Mission Creek downstream of Canon Perdido Street including the bridges at Haley at De La Vina, Ortega, Cota, and Mason;
3. Installing a new culvert and bypassing the Oxbow Channel (Oxbow) below Highway 101. The Oxbow would be left in place as a low-flow channel (see Attachment);

4. Planting native riparian species along structurally stabilized banks, and creating additional riparian habitat areas adjacent to Mission Creek, including constructing HEZ in areas created by remnants from the Project's property acquisitions;
5. Reconstructing Mission Creek banks using either a vertical wall, or a combination vertical wall and structurally stabilized banks;
6. Maintaining the existing natural Mission Creek bottom, and revert the concrete lined bottom sections to natural conditions (except through the Oxbow and beneath bridges); and
7. Installing fish habitat improvements.

The LMCFCP has undergone extensive public review and study, as memorialized in the Army Corps EIS/EIR, and subsequent Army Corps and City/County permitting by the California Coastal Commission (CCC).

In 2007, the LMCFCP was presented to the Planning Commission and CCC, and the City and County received a Coastal Development Permit (CDP). Previously, the Army Corps had obtained a Federal Coastal Consistency Determination, but since their funding did not exist they could not implement the Project and a local sponsor needed a CDP.

On September 15, 2010, the Historic Landmark Commission (HLC) accepted the Historical Resources Evaluation Report (HRER) prepared by Applied Earthworks, Inc. The HRER recommended removal of the former garage for the Californian Hotel at 15 West Mason Street from the Potential Historic Resources list as a Structure of Merit because it has been substantially modified. The Mason Street Bridge itself did not qualify as a historic resource. At the same hearing, the HLC also accepted the Archaeology Survey Report dated August 2010, and accompanying memorandum dated August 24, 2010. The Archaeology Survey Report was prepared by Ann Munns and Leeann Haslouer, of Applied EarthWorks, Inc. The report concluded that there is a low potential for encountering prehistoric archaeological resources during construction, and the standard condition regarding the discovery of unanticipated archeological resources shall apply and be reproduced on the construction plans.

#### Design Constraints and Design Parameters

The Project is currently in the preliminary design phase. The applicable design constraints and design parameters include the following:

1. The LMCFCP Project – Creek banks will be widened to approximately 55 feet, and the bridge will need to span over the creek.
2. West Bank Abutment – At issue is where to begin the abutment along the creek's west bank in an effort to minimize impacts to the residential property located at 20 West Mason (northwest bank) and a large Sycamore tree (southwest bank). It is expected that the 20 West Mason property will be acquired and protected in place as part of this Project. The 20 West Mason property will be resold after the Project is complete.
3. Maintain two-way circulation along Mason Street and Kimberly Avenue, as documented in the LMCFCP EIR/EIS, including accommodation for bicycles and pedestrians. The intersection needs to incorporate a bus (SU 40) turning from Mason onto Kimberly in anticipation of the proposed Children's Museum on Kimberly.
4. Provide for HEZs along the northeast and southeast creek banks as documented in the LMCFCP EIR/EIS.
5. Mason Street improvements need to be coordinated with the "La Entrada" project's proposed Mason Street right of way re-alignment improvements. Kimberly Avenue

improvements need to accommodate the proposed HEZ north of the bridge and relocation of a 54-inch diameter storm drain, and minimize the right of way take at 16 West Mason. A laundry building at 16 West Mason will need to be demolished to accommodate the realignment of Kimberly Avenue.

6. Design is required to meet appropriate American Association of State Highway and Transportation Officials and Caltrans standards, City engineering and transportation design standards, and Uniform Building Code requirements.

The Public Works Project Team has worked closely with the Creeks Division for the past year regarding the configuration and planting palette of the two LMCFCP HEZ near the Mason Bridge. The two HEZs are along the east bank. One is immediately adjacent to the bridge in the location of the building at 15 West Mason Street. The Project proposes to demolish the building, widen the Creek, and restore the remnant area as a HEZ as shown in the LMCFCP's EIR/EIS. A second HEZ is along the north east creek bank along Kimberly Avenue. There is a vertical wall planned at the top of the slope, so the planting palette will be comprised of riparian vegetation that will form an outer riparian canopy to allow for shading of the creek. A presentation was made to the Creeks Committee on October 26, 2010, for their review and comment on the HEZ areas.

There are several design solutions to address the above issues. Public Works will work with the Project stakeholders on the preferred design layout.

#### Project Design

There are several options for the layout of the bridge and the approach roadways depending on the location of the west abutment. These variations will be presented in early concept form to the HLC for comments.

A concrete bridge rail for the Project will be custom designed and would be at least 43 inches high, similar to rails approved for the bridges at Haley at De la Vina Street and Ortega Street.

#### Project Construction

The proposed Project involves closure of Mason Street from State Street to Chapala Street during construction, demolition of the existing bridge, and reconstruction of a new bridge.

The construction process consists of multiple phases:

1. Demolition of existing building structures which are encroaching on the Creek and relocation of utilities.
2. Construct water diversions to channelize and protect the water from the demolition of the bridge.
3. Bridge demolition.
4. Pile driving to install the deep bridge foundation supports.
5. Cast in place abutments walls on top of piles to transfer the bridge loads to the pile supports.
6. Form, reinforce, and pour bridge deck.
7. Restore habitat along the new Creek banks.

Budget and Timeline

The Project is funded primarily from the Federal Highway Administration Highway Bridge Program. We are currently in the Preliminary Design Phase. We anticipate moving into Final Design in early 2012. Construction is anticipated to follow the construction of the Chapala/Yanonali Bridge, which is currently scheduled for the spring of 2013. The Mason Street Bridge construction is anticipated to begin in the spring of 2014.

Attachment: Project Plans

DS/JE/sk

cc: Bettie Weiss, City Planner  
Pat Kelly, Assistant Public Works Director/City Engineer  
Cameron Benson, Creeks Restoration/Clean Water Manager  
Jessica Grant, Project Planner

# Mason Street Bridge Replacement

## Overview

**Scope of Work**  
Proposal to replace the Mason Street Bridge over Mission Creek utilizing funds from the federal-aid Highway Bridge Program administered by the Federal Highway Administration (FHWA) through Caltrans Local Assistance. The bridge would be replaced with a new bridge that meets current applicable City, American Association of State Highway and Transportation Officials (AASHTO) and Caltrans design standards.

### Sheet Index

- Sheet 1 Cover Sheet, Project Constraints
- Sheet 2 Site Photos
- Sheet 3 Site Photos
- Sheet 4 Site Photos
- Sheet 5 LMCFCP Reference Sheets
- Sheet 6 Landscape Concept
- Sheet 7 Approved Bridge Rails for Cabrillo and Ortega Bridges
- Sheet 8 Approved Cabrillo Bridge Channel Wall

### Project Statistics

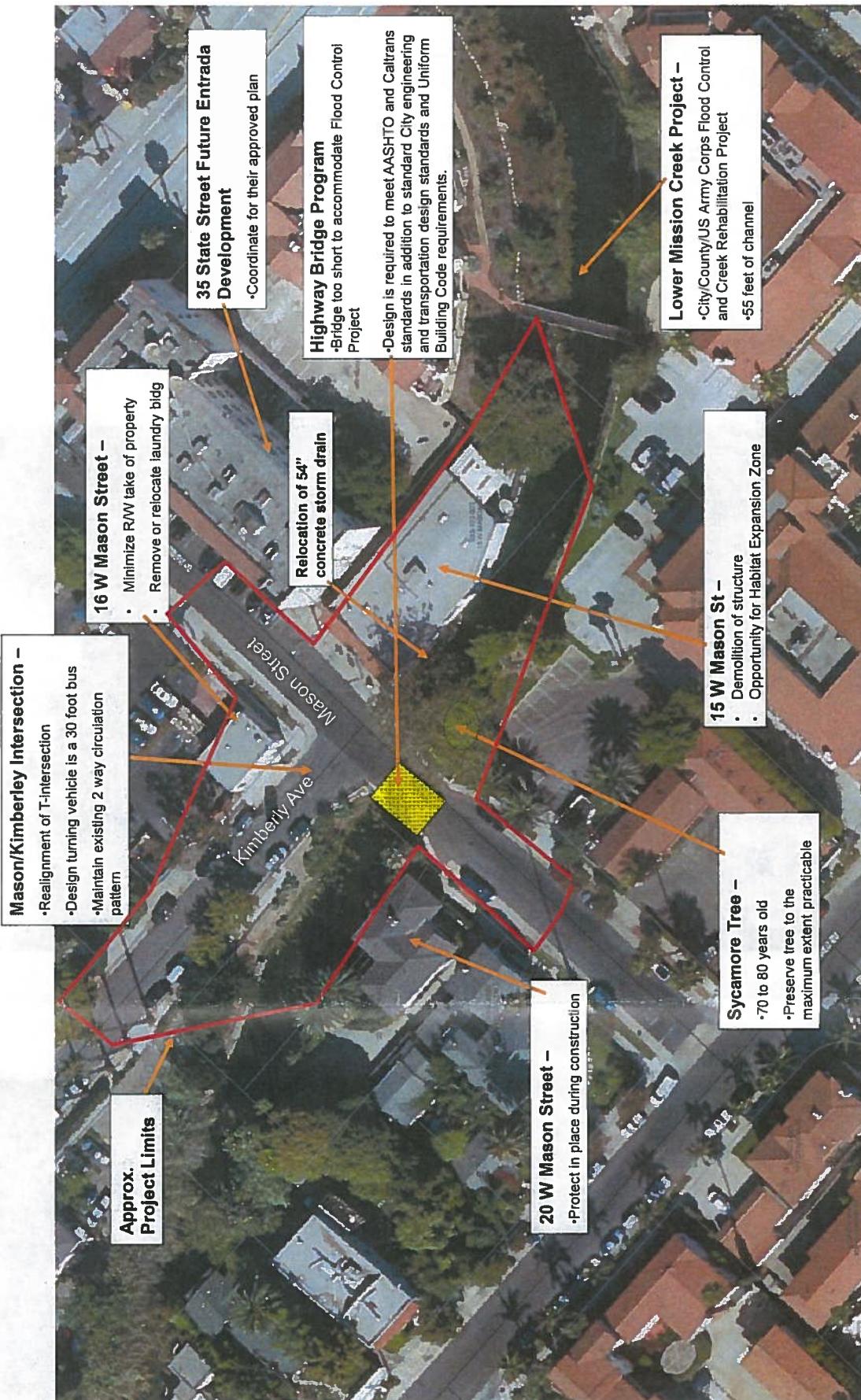
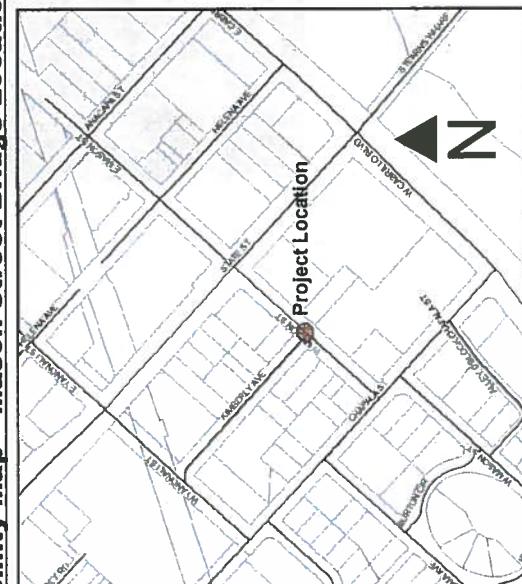
Owner: City of Santa Barbara

APN: ROW-002-096; MST2010-00261

Located in the Coastal Zone, Appealable Jurisdiction 1

**Existing Condition:** The Mason Street Bridge is a pre-cast reinforced concrete bridge deck supported on stone abutments. The abutments were constructed in early 1900's and the existing deck was replaced in the 1950's. The deck width, on Mason Street, is approximately 32 feet within 60 feet of right of way. The existing bridge deck does not have standard sidewalks; there are no bike lanes as well; pedestrians currently walk on the bridge deck on each side of Mason Street delineated by vertical curb while bicycles share the roadway with vehicles.

### Vicinity Map – Mason Street Bridge Location



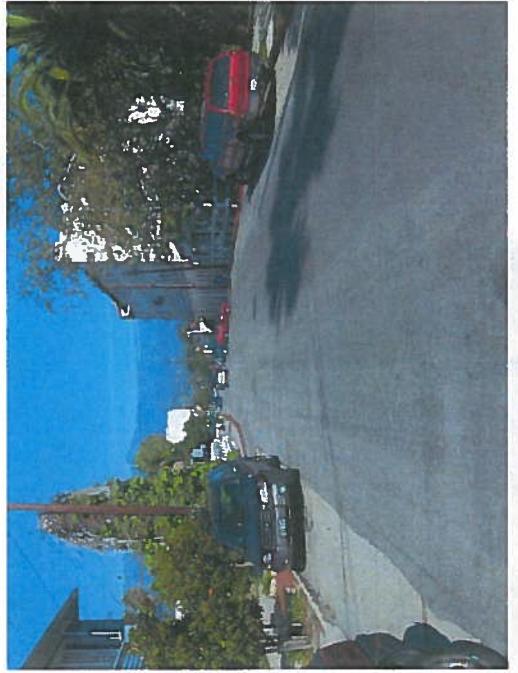
# Mason Street Bridge Replacement

## Site Photos - Roadway



VIEW FACING WEST

From Mason St looking towards Chapala St



VIEW FACING EAST

From Mason St looking towards State St



VIEW FACING NORTH

From Mason St looking up Kimberley Ave

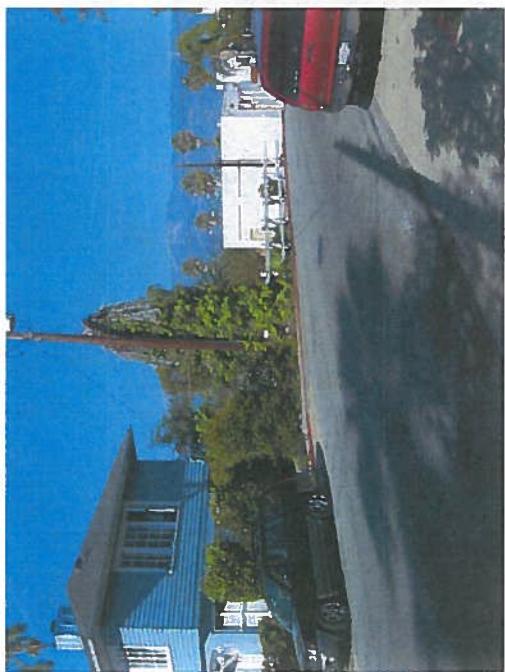


VIEW FACING SOUTH

From Mason St looking downstream

# Mason Street Bridge Replacement

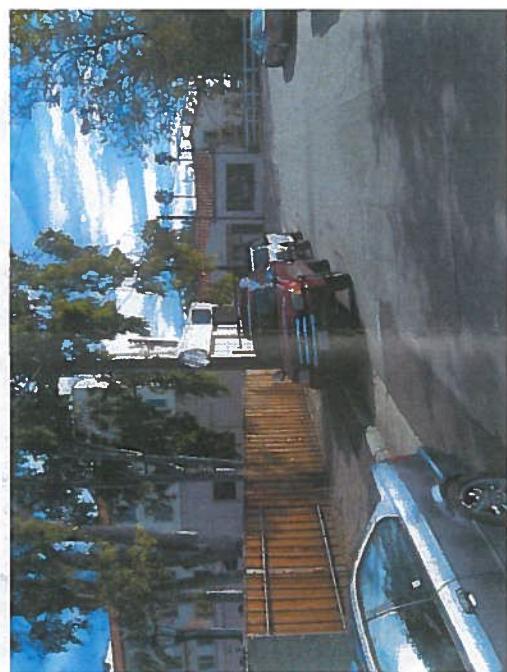
## Site Photos – Roadway/Creek



VIEW FACING NORTHEAST  
From Mason St sidewalk



VIEW FACING SOUTHWEST  
From Mason St looking downstream at  
Sycamore tree and overhead utilities sheet 3



VIEW FACING SOUTH  
From Kimberley Ave



VIEW FACING SOUTH  
From Kimberley Ave



VIEW FACING SOUTH  
From Mason St looking downstream on  
Mission Creek



VIEW FACING NORTH  
From Mason St looking upstream on  
Mission Creek

# Mason Street Bridge Replacement

## Site Photos – Creek Walls



VIEW FACING SOUTHWEST  
From Mason St Bridge looking at southwest  
wall/Sycamore Tree



VIEW FACING SOUTHEAST  
From Mason St looking downstream



VIEW FACING WEST  
From Kimberley Ave looking towards 20  
West Mason St



VIEW FACING NORTHWEST  
From Kimberley Ave looking upstream at  
the Gabion creek wall



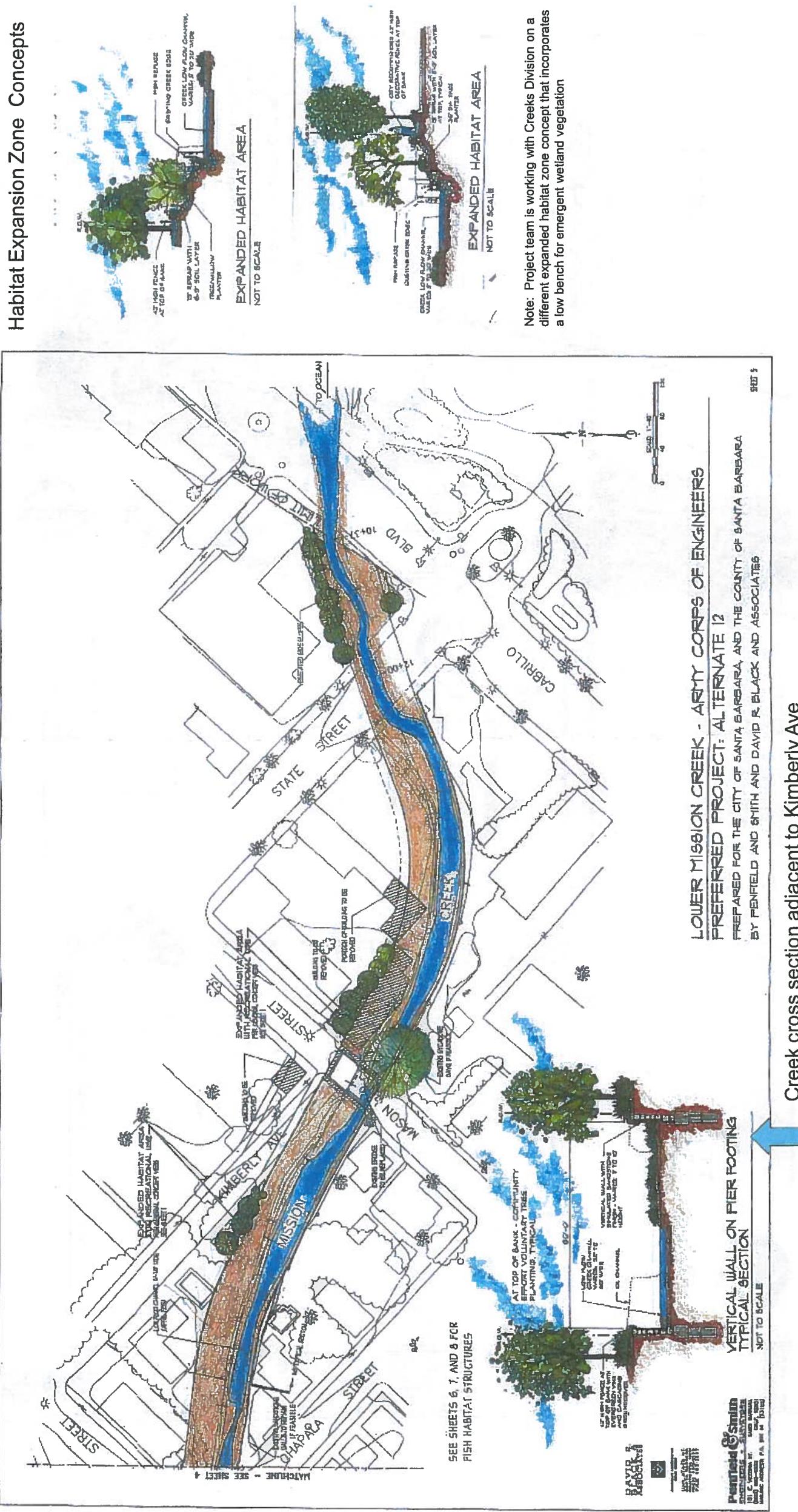
VIEW FACING SOUTH  
From Mason St looking downstream



VIEW FACING SOUTH  
From Kimberley Ave looking downstream at  
Mason St. Bridge

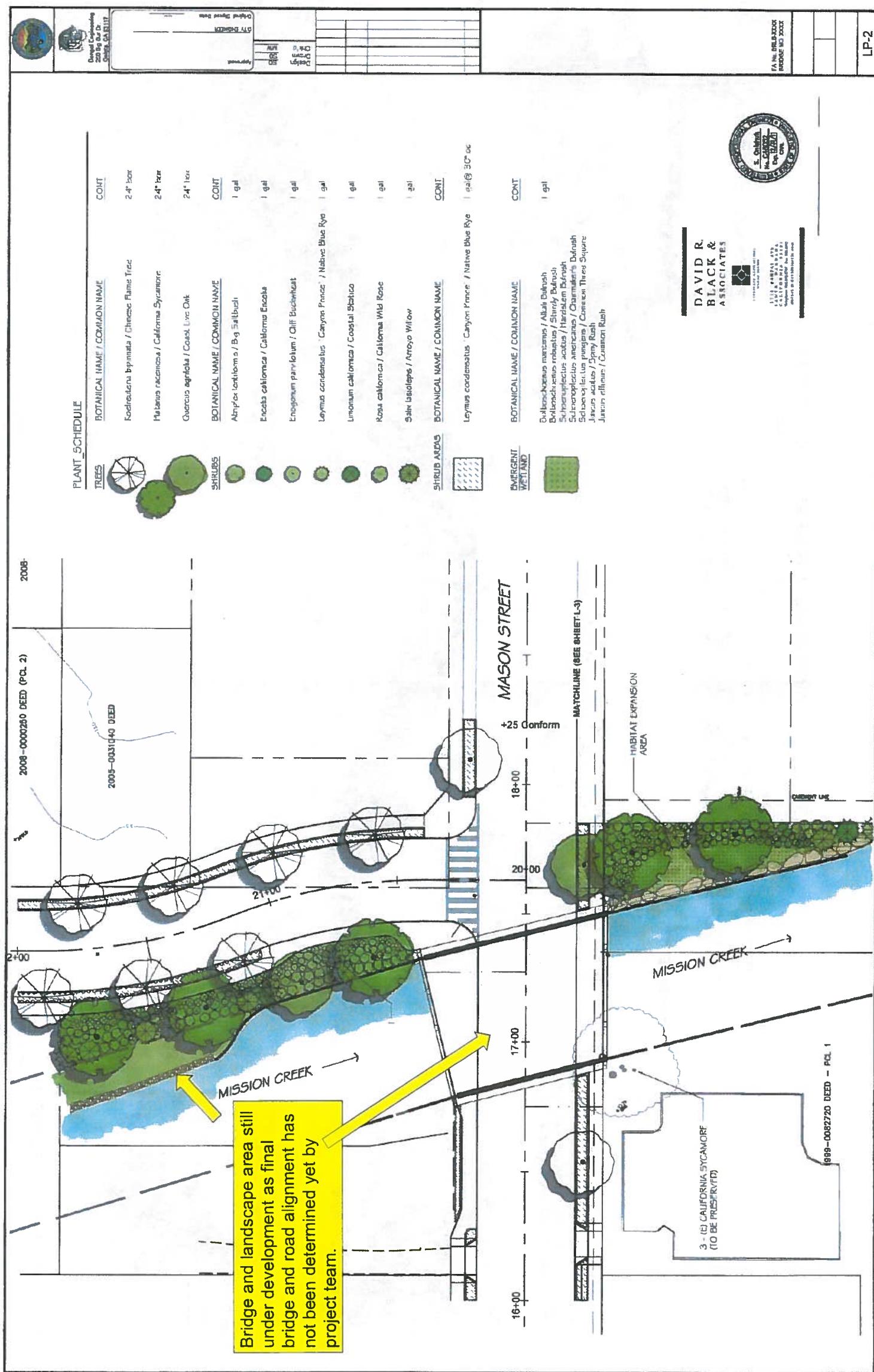
# **Lower Mission Creek Flood Control Project**

Habitat Expansion Zone Concepts



Sheet 5

# Mason Street Bridge Replacement – Restoration Concept



# Mason Street Bridge Replacement

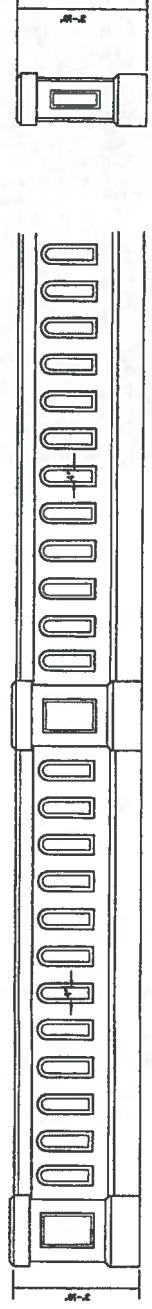
## 1) Bridge Railings



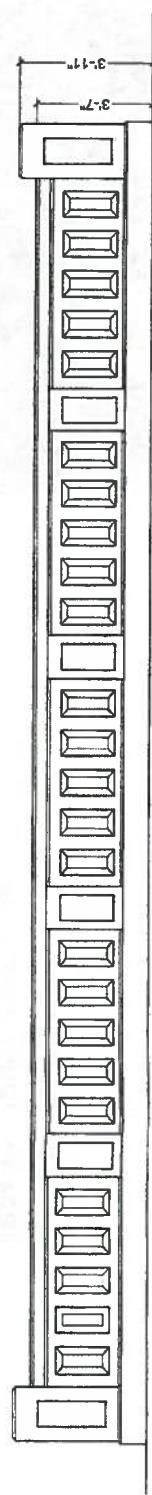
Existing Barrier Railings  
North side



Existing Barrier Railings  
South side



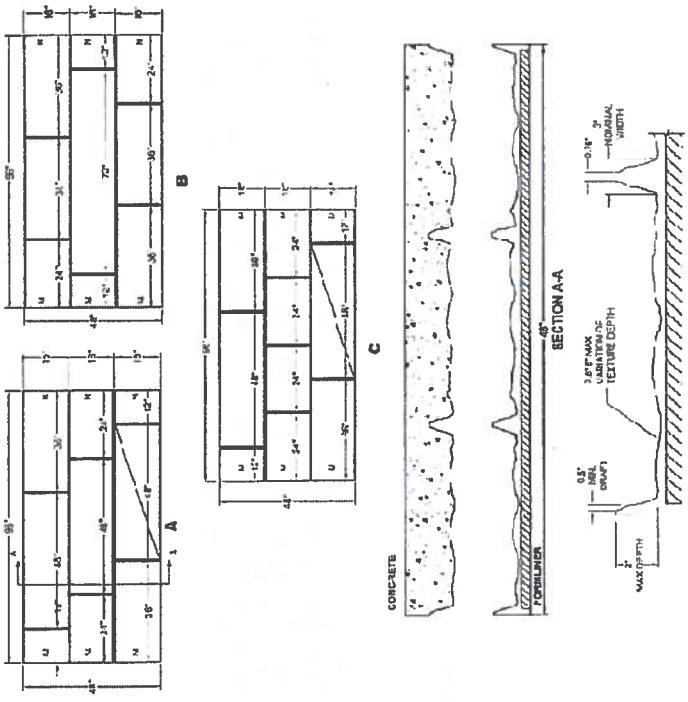
CABRILLO STREET BRIDGE - ALTERNATE 1



ORTEGA STREET BRIDGE - ALTERNATE 2

# Mason Street Bridge Replacement

## 2) Bridge Abutments Walls



Existing Abutment Wall



Existing Abutment Wall



Similar architectural treatment  
for new abutment wall

## Approved Channel Wall for Cabrillo Blvd Bridge

- Approved by HLC for Cabrillo Blvd Bridge channel walls, 500 feet downstream, between State St and Cabrillo Blvd
- California Coastal Commission approved for Tidewater Goby Hideouts
- Color can suit to match existing
- Concrete specialist able to mimic original sandstone

**Mason Street Bridge Planting Section**

David R. Black & Associates

